The President has seen 6/24

THE WHITE HOUSE

WASHINGTON

June 18, 1987

MEMORANDUM FOR THE PRESIDENT

FROM: THE DOMESTIC POLICY COUNCIL

SUBJECT: Stratospheric Ozone

ISSUE: What guidance should the U.S. delegation be given for the next stages of international negotiation of an agreement for regulation of chemicals believed capable of future depletion of stratospheric ozone?

BACKGROUND:

Beginning in the 1970's, concerns were expressed in some parts of the scientific community that continued growth in the use of certain chemicals would result in future depletion of stratospheric ozone. Scientists' models predict this could cause adverse health and environmental effects, including increased skin cancer deaths, cataracts, effects on the immune system, damage to crops and materials and impacts on aquatic life. Other scientists believe that some of these projections, which extend as far as the year 2165, do not accurately account for numerous scientific uncertainties and for future technological, scientific, medical and behavioral changes that may occur. The chemicals in question, chlorofluorocarbons (CFCs) and Halons, are used commercially in refrigerators, building and mobile air-conditioners, foam insulation and fire extinguishers, and by the electronics industry. Some of them have important national defense applications for which there are currently no substitutes.

Based on their models, most scientists now believe that significant ozone depletion is likely to occur by the year 2040 unless global action is taken to control the chemicals at issue, even though there are numerous medical and scientific uncertainties about the potential impacts of such depletion. Ideally, any freeze or reduction in CFCs should be based on reliable scientific evidence that use of CFCs will cause depletion of stratospheric ozone. While there are differing views within the Council on the reliability of the scientific evidence available at this time, the long life of CFC accumulations, and the consequent risk assessments associated with projected ozone depletion argue for strong action to secure an international agreement this year, with provision for future scientific assessment. Since U.S. participation in an international agreement will require domestic regulations, the Domestic Policy Council will address these and potential non-regulatory options as additional policy guidance is needed.

Congressional Interest. Concern over the predicted depletion of ozone led Congress to add an ozone protection section to the Clean Air Act in 1977 and led EPA to ban CFC aerosols in 1978. Some other countries subsequently implemented partial bans of CFC aerosol use. Currently, there is strong congressional pressure for additional action to protect the ozone layer. The Senate has passed a resolution calling for a strong international agreement, and urging an automatic reduction in CFC production of fifty percent. If an effective international agreement is not reached, and we fail to secure firm and concrete commitments from other countries, Congress and the courts may require unilateral domestic reductions of the chemicals in question. Such U.S. action, alone, would not protect the ozone layer and would disadvantage American businesses in world markets.

International Negotiations. The U.S. is a party to the 1985 Vienna Convention for Protection of the Ozone Layer. (Note: Although the Convention is not in effect yet, we expect it will be ratified by a sufficient number of countries.) Your ratification message to the Senate stated that this Convention addresses stratospheric ozone depletion "primarily by providing for international cooperation in research and exchange of information . . . and could also serve as a framework for negotiation of regulatory measures that might in the future be considered necessary. . . ." The U.S. has received considerable credit by some in Congress for its leadership role in the three negotiating sessions held thus far to develop an international agreement on control of the chemicals in question. However, some are concerned that not all emerging industrialized nations have participated in the negotiations. The U.S. interagency delegation has been guided by a Circular 175 approved under the authority of the Secretary of State, following approval by some agencies at various staff levels. The next negotiating session is scheduled for June 29, 1987 with a plenipotentiary conference scheduled in Montreal in September to sign the agreement.

Cost-Benefit. In a cost benefit analysis relying on EPA estimates of ozone depletion effects on cancer deaths through 2165, the potential benefits of taking some actions to protect the ozone layer were found to be substantially greater than the costs of controlling the relevant chemicals. Cost benefit analysis suggests that both a freeze and a further 20-percent reduction of the ozone-depleting chemicals are economically justified. Further reductions are also indicated in a majority of cases, depending on information that will be acquired prior to taking such steps.

DISCUSSION: The most recent international negotiations have produced a Chairman's Text for an agreement based on the structure presented by the U.S. Each country has been asked to review this Text prior to the June 29 meetings. The Domestic Policy Council met on May 20 and June 11 to discuss the Chairman's Text, as well as the overall negotiations. The Council agreed that we should continue with negotiations; however, your further guidance on the following issues and options is requested.

ISSUE 1 -- PARTICIPATION AND ENTRY INTO FORCE OF THE PROTOCOL

Ideally, all nations that produce or use ozone-depleting chemicals should participate in the protocol if it is to address globally the ozone depletion problem. Otherwise, production of CFCs by nonparticipants could eventually offset reductions by the participating countries. The Council believes we should seek maximum participation.

Which of the following positions should the U.S. delegation seek with regard to entry into force (EIF) and continuing effect of the protocol?

RR

_____ Option 1. Entry into force of the protocol should occur only when a substantial proportion of producing/consuming countries as determined by the U.S. delegation have signed and ratified it.

This option is supported by State, EPA, DOD, DOE and HHS.

_____ Option 2. Entry into force should occur only when a substantial proportion of producing countries, as determined by an established formula, have signed and ratified it.

This option is supported by Interior, Commerce, Justice, CEQ and OSTP.

ISSUE 2 -- GRACE PERIOD FOR LESSER DEVELOPED COUNTRIES

To encourage participation by all countries, should lesser developed nations be given a limited grace period up to the year 2000, to allow some increases in their domestic consumption? This has been the U.S. position and is unanimously supported by the Council.

Yes RR No_____

ISSUE 3 -- VOTING

Should the U.S. delegation seek to negotiate a system of voting for protocol decisions that gives due weight to the significant producing and consuming countries? This proposal has unanimous support of the Council.

Yes RR No_____

ISSUE 4 -- MONITORING AND ENFORCEMENT

Should the U.S. delegation seek strong provisions for monitoring, reporting, and enforcement to secure the best possible compliance with the protocol? This proposal has unanimous support of the Council.

Yes RR No_____

ISSUE 5 -- CREDITS FOR PREVIOUS ACTION

Should the delegation seek a system of credits for emissions reduction, resulting from the 1978 U.S. ban of non-essential aerosols? In previous negotiations, other countries rejected this proposal, claiming that the U.S. is still the largest consumer of CFCs.

_____ Option 1. Yes.

This would assure the consideration of previous actions taken to deal with ozone depletion and is supported by Interior, CEQ and OSTP.

RR Option 2. No.

State is convinced that seeking credits would stalemate the negotiations, and will stimulate unnecessary proposals from other parties. This option is supported by State, EPA, Justice, HHS, DOE and USTR.

ISSUE 6 -- FREEZE

Should the U.S. delegation seek a freeze at 1986 levels on production/consumption of all seriously ozone-depleting chemicals (CFCs 11, 12, 113, 114, 115; Halons 1201 and 1311), to take effect one or two years after the protocol entry into force? This proposal is consistent with the Chairman's Text and has unanimous support of the Council.

Yes RR No_____

A freeze will achieve a majority of the health and environmental benefits derived from retention of the ozone layer. Interior, Commerce, OSTP and CEQ feel that it will also spur industry to develop substitutes for ozone-depleting chemicals. Halons are not presently mentioned in the Chairman's Text, but it is intended that they will be included. The earliest expected entry into force (EIF) date is 1988.

ISSUE 7 -- SCHEDULED 20% REDUCTION

Should the U.S. delegation seek a 20% reduction from 1986 levels of CFCs 11, 12, 113, 114 and 115, four years after EIF, about 1992, following the 1990 international review of updated scientific evidence? The Council supports this action, but is divided over options for how the reductions should be implemented:

RR Option 1. The 20% reduction should take place automatically, unless reversed by a 2/3 vote of the parties.

This is consistent with the Chairman's Text and the Circular 175. It is supported by EPA, State, Justice, CEQ, HHS, DOE and USTR. Commerce and DOD support this option for all chemicals except CFC 113; 113 has national defense applications for which there are currently no available substitutes.

_____ Option 2. The 20% reduction should take place only if a majority of the parties vote in favor following the 1990 scientific review.

This option is supported by Interior.

_____ Option 3. Further reductions should not be scheduled at this time. We may later decide to seek these in light of future scientific evidence.

This option is supported by OSTP.

ISSUE 8 -- SECOND PHASE REDUCTION

Should the U.S. delegation seek a second-phase CFC reduction of an additional 30% from 1986 levels, consistent with the Chairman's Text? This would occur about 8 years after EIF (about 1996).

RR Option 1. Yes, and this should occur automatically, unless reversed by a 2/3 vote of parties, following scientific review.

This is supported by EPA and State.

_____ Option 2. Yes, and this should occur only if a majority of the protocol parties vote in favor, following scientific reviews.

HHS, Justice, DOE, DOD, CEQ and USTR support this.

_____ Option 3. Further reductions should not be scheduled at this time. We may later decide to seek these in light of scientific evidence not now available about the results of a freeze and any other reduction.

This would curtail future reductions, and require a new protocol. Commerce, Interior and OSTP support this.

ISSUE 9 -- LONG RANGE OBJECTIVE

Should the U.S. delegation support the ultimate objective of protecting the ozone layer by eventual elimination of realistic threats from man-made chemicals, and support actions determined to be necessary based on regularly scheduled scientific assessments. This proposal is consistent with the Chairman's Text and the U.S. delegation's previous position, and has unanimous support of the Council members.

Yes RR No_____

ISSUE 10 -- TRADE PROVISIONS

The international negotiations have focused on a trade provision 1) to insure that countries are not able to profit from not participating in the international agreement, and 2) to insure that U.S. industry is not disadvantaged in any way through participation.

What should be the nature of any trade article sought for the protocol by the U.S. delegation?

RR Option 1. Seek a provision that will best protect U.S. industry in world markets, by authorizing trade restrictions against CFC-related imports from countries that do not join or comply with the protocol provisions.

This option is supported by Justice, Interior, OSTP, EPA, DOE, USTR, HHS and State. Note: Commerce is against the use of trade restrictions unless there is no other way to protect U.S. industry.

_____ Option 2. Do not seek a trade article for the protocol.

Ralph C Bledsoe

Ralph C. Bledsoe
Executive Secretary
Domestic Policy Council

Attachment: Chairman's Text

CHAIRMAN'S TEXT

Distr.
RESTRICTED

UNEP/WG.172/CRP.8/Rev.1
30 April 1987

Original: ENGLISH

Ad Hoc Working Group of Legal and Technical
Experts for the Preparation of a
Protocol on Chlorofluorocarbons to
the Vienna Convention for the
Protection of the Ozone Layer (Vienna Group)

Third Session
Geneva, 27-30 April 1987

TEXT PREPARED BY A SMALL SUB-WORKING GROUP OF
HEAD OF DELEGATIONS

ARTICLE II: CONTROL MEASURES

1. Each party, under the jurisdiction of which CFC 11, CFC 12, CFC 113, (CFC 114, CFC 115) are produced shall ensure that within (2) years after the entry into force of this Protocol the (combined annual production and imports) (combined adjusted annual production) of these substances do not exceed their 1986 level.

2. Each party, under the jurisdiction of which substances referred to in paragraph 1 are not produced at the time of the entry into force of this Protocol, shall ensure that within (2) years from the entry into force of this Protocol (its combined annual production and imports) (its combined adjusted annual production) do not exceed the levels of imports in 1986.

3. Each party shall ensure, that within (4) years after the entry into force of this Protocol levels of substances referred to in paragraph 1 attained in accordance with paragraphs 1 and 2 will be reduced by 20 per cent.

4. Each party shall ensure that within (6) (a), (8) (b) years after the entry into force of this Protocol, the 1986 levels of substances referred to in paragraphs 1 and 2 will be further reduced (by 30 per cent), (a) (if the majority of the parties so decide, (b) (unless parties by a two-third majority otherwise decide), in the light of assessments referred to in Article III, such decision should be taken not later than (2) (4) years after entry into force.

5. Parties shall decide by (two-third majority) (a majority vote)

- whether substances should be added to or removed from the reduction schedule
- whether further reductions of 1986 levels should be undertaken (with the objective of eventual elimination of these substances).

These decisions shall be based on the assessments referred to in Article III.

Note: A second paragraph reading as follows has to be added to Article III. Beginning 1990, and every four years thereafter, the parties shall review the control measures provided for in Article II. At least one year before each of these reviews, the parties shall convene a panel of scientific experts, with composition and terms of reference determined by the parties, to review advances in scientific understanding ~~of~~ modification of the ozone layer, and the potential health, environmental and climatic effects of such modification.

THE WHITE HOUSE

WASHINGTON
May 15, 1987

MEMORANDUM FOR THE ENRE WORKING GROUP

FROM: RALPH C. BLEDSOE

SUBJECT: Draft Paper on Stratospheric Ozone

Attached is a draft of the paper on the Stratospheric Ozone issue to be distributed to the Domestic Policy Council in advance of the meeting scheduled for next Wednesday, May 20, 1987. Please provide your comments on this paper to either Bob Sweet or me by Monday, May 18 at 10:00 a.m.

The text of the OMB "fact sheet" attachment will be routed separately. Thanks for your timely response.

DRAFT

May 15, 1987

MEMORANDUM FOR THE DOMESTIC POLICY COUNCIL

FROM: THE ENERGY, NATURAL RESOURCES & ENVIRONMENT WORKING GROUP

SUBJECT: Stratospheric Ozone Protocol Negotiations

Issue - What should the U.S. position be on the protocol to protect the stratospheric ozone layer by controlling emissions of ozone-depleting substances.

Background - Because of the global nature of stratospheric ozone depletion, a delegation, led by the State Department, has been involved in international negotiations to reduce the use of chemicals that appear to damage the ozone layer. These chemicals are included in the following seven broad categories: solvents, refrigerants, foam blowing, fire extinguishing agents, sterilants, aerosol propellants, and miscellaneous uses.

There have been three negotiating sessions to date, the first in December 1986, the second in February 1987, and the third in April 1987. The general objectives for the U.S. Government are delineated in State Department Circular 175 of November 28, 1986. These objectives include:

(a) a near-term freeze on the combined emissions of the most ozone-depleting substances;

(b) long-term scheduled reduction of emissions of these chemicals down to the point of eliminating emissions from all but limited uses for which no substitutes are commercially available (could be as much as 95%), subject to c; and

(c) periodic review of the protocol provisions based upon regular assessment of the science, so as to reduce or add chemicals, or change the schedule or the emission reduction target.

The Working Group on Energy, Natural Resources and the Environment has been meeting periodically over the past several months and has considered a number of complex aspects of stratospheric ozone depletion. A fact sheet is attached that summarizes the available scientific, environmental, economic, and international data being used to address this issue.

Discussion - Since the negotiations are now reaching a stage where final positions are being influenced, and due to the broad impact of these positions, several Cabinet agencies have asked

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that the Domestic Policy Council review the U.S. position and give guidance to the U.S. negotiating team on several elements of our position.

The negotiating team will next meet with the representatives of other countries on June 29 to discuss the Chairman's text. At that time they will address the chemicals to be covered, the timing and stringency of the controls, and the application of scientific data to this process. Following these meetings, the Council will be informed, and asked for further guidance on the U.S. final position prior to the full negotiating meeting on September 8, 1987.

DPC Guidance - General DPC guidance is sought at this time on the following issues:

1. Chemical Coverage

   -- The U.S. objective is to achieve the broadest coverage of major ozone depleters on a weighted basis, including halons.

   -- The European Community, Japan, and the USSR wanted only CFC 11 and 12; but now may agree to CFC 113, 114, 115, and maybe halons.

   -- Options include seeking differential coverage, i.e. reducing some and only freeqing others. There is some concern about reducing Halons, given its defense uses.

   -- Here in the U.S., there is broad interagency agreement on chemical coverage. The negotiating team will press for the broadest attainable coverage, subject to DPC guidance.

2. Stringency and Timing of Controls; Relationship to Periodic Assessments

   -- Key issues are:

      o Stringency: Should there be an initial freeze and subsequent reductions? What should the level be and in what increments?

      o Timing: There appears to be environmental benefits for early action to reduce CFC's, in that it would encourage industry to develop CFC substitutes. However, there is also a need to provide time for adjustment if scientific dictates.

      o Relationship to periodic reassessments of scientific, technological and economic factors scheduled by protocol: Should we go for (1) planned reductions

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subject to reversal by vote of parties after reassessment, or (2) target levels to be implemented only by positive vote after reassessment, or (3) no targeted reductions?

-- The Chairman's text (attached), released after the last negotiating session in April 1987, represents a possible emerging international consensus and is a convenient vehicle for review. It includes:

- o Freeze at 1986 levels of production/consumption of CFC 11, 12, 13, [114, 115] within two years after entry into force (EIF) of the protocol. Likely freeze date 1992.

- o 20% reduction 4 years after EIF (will go into effect unless reversed by two-thirds vote of parties after scheduled reassessment). Likely date 1994.

- o Additional 30% reduction, to be implemented after scheduled reassessment either

  -- 6 years after EIF (likely date 1996), if positively confirmed by majority vote of parties, or

  -- 8 years after EIF (likely date 1998), unless reversed by two-thirds vote of parties.

- o Additional steps down to possible eventual elimination of ozone depletion would be decided subsequently by parties based on periodic reassessments.

Evidence: Should U.S. delegation seek agreement along lines of chairman's text, work for greater stringency/earlier impact, or propose some relaxation in terms?

(a) Freeze. Interagency accord, within 1-2 years of EIF.

(b) 20% reduction. General interagency agreement, except some agencies believe implementation should require positive vote of parties following reassessment.

(c) Additional 30% reduction. There is interagency disagreement here.

-- Should reduction beyond first 20% be scheduled; if so, at what level?

-- Should reduction 6 years after EIF be subject to a positive vote, or 8 years after EIF subject to reversal, or either? Other?

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(d) Additional steps. Should the delegation press for further reductions? If so, at what levels and time frame? Should they require a positive vote or be implemented unless there is a vote for reversal?

3. Control Formula and Trade Provisions: (Still needs work; seeking guidance in principle.)

(A) Trade Among Parties.

Significant differences remain among governments over formula for regulating controlled chemicals.

- o Options include national ceilings on production; production plus imports combined or separately; or "adjusted production." The U.S. preference presently is production plus imports (less exports to parties, less amounts destroyed), or combinations thereof.

- o An interagency agreement favoring "adjusted production," but compromise may be required.

- o U.S. objectives include effective control of emissions with accountability, fewest restriction on the flow of trade and captial among parties, most favorable formula for U.S. industry.

- o Subject to DPC guidance, the delegation will pursue these objectives and seek DPC approval of specific recommendations.

(B) Trade With Non-Parties.

-- Key elements:

- o Wide international consensus on:

  -- Ban on imports of controlled chemicals in bulk from non-parties. There is wide international consensus here.

- o No international consensus on:

  -- Restrictions on exports of bulk chemicals.

  -- Restrictions on imports of products containing controlled chemicals.

  -- Consideration of restrictions on products made with controlled chemicals.

  -- Consideration of restrictions on export of technology.

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-- U.S. objectives: to regulate trade in order to encourage adherence to protocol and avoid benefits to non-parties at expense of parties. Proposals consistent with GATT. Implementation timed to minimize dislocation.

-- Interagency consensus in favor of strong trade article including trade in bulk chemicals and products containing them.

-- Subject to DPC guidance, delegation will pursue these objectives and seek DPC approval of specific recommendations.

4. Participation.

-- U.S. objective: To encourage effective global control through widest possible participation by other countries.

-- Problem: The less developed countries need concessions for domestic consumption to encourage adherence; exemptions must remain sufficiently limited to avoid undercutting global controls. The concessions proposed could double global production ceiling of fully used within the period allowed.

-- The most promising option entails exemption from controls for limited period for least consuming countries (LDCs) followed by adherence.

-- Related problem: Majority LDC membership could control protocol voting to U.S. disadvantage. Should U.S. press for weighted voting?

-- This issue needs more work. Subject to DPC guidance, we will refine in our negotiations and seek DPC approval of specific recommendations.

CHAIRMAN'S TEXT

Distr.
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UNEP/WG.172/CRP.8/Rev.1
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issues relating to the extent to which the FSLIC may require payment of an exit premium by the transferring institution" according to the request.

Specifically, the bank board said it wants comments on:

• Whether institutions that convert their charters and thus terminate their FSLIC insurance are subject to the exit fee provisions spelled out in section 407(d) of the National Housing Act;

• Whether a thrift that voluntarily terminates its FSLIC insurance and immediately obtains FDIC insurance coverage must pay a final premium;

• Whether FSLIC special assessments may be used in calculating a final insurance premium; and

• Whether the bank board has the authority, under provisions other than section 407(d) of the NHA, to assess exit fees.

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ENVIRONMENT: NATIONS NEAR CONSENSUS ON PROTECTING STRATOSPHERIC OZONE LAYER

GENEVA—(By a BNA Staff Correspondent)—Delegations from 31 nations moved closer April 27-30 to a middle ground on a control strategy for chemical compounds that are believed to be putting Earth's protective ozone layer at risk.

From the beginning of the negotiating session, there seemed to be agreement that there should be a global freeze on the production of long-lived industrial compounds that contain chlorine or bromine. By the end of the session, there seemed to be acceptance of the idea that incremental cuts in production are also warranted, based on periodic scientific reviews.

Some issues still were outstanding at the conclusion of the meeting, including the timing and stringency of production reductions, and trade issues. Delegates took home for decision by their governments a so-called consensus that offers a number of bracketed options.

Most of the delegations felt there had been remarkable progress toward a consensus, and they were optimistic about the outlook for an international agreement in September. Non-governmental organizations that were given an observer status during the "closed" sessions were not nearly so sanguine.

Observers from some of the environmental organizations feared that the United States gave too much ground during the negotiations in Geneva, and the result might be a weak protocol in September.

On the other hand, producers of CFCs and their customers felt the negotiators were going too far, too fast. Kevin Fay, executive director of the Alliance for Responsible CFC Policy, told BNA April 30, "We have advocated a freeze only, and extension of the CFC coverage to all of the fully halogenated compounds as well as the halons."

The alliance estimates that a freeze would curtail the equivalent of more than four years' worth of current production by the year 2000 because expected growth would be prevented, Fay said. "We are very frustrated at the inability to recognize that the incentive to develop substitutes is there with a freeze," he said. "We think it is bad public policy to try to do more than a freeze."

On the final day of the negotiating session, Mostafa Tolba, executive director of the United Nations Environment Program, said, "We hope, if the scientific evidence continues to point in the direction it is now pointing, that, by the year 2000, we will have phased out everything." A lesser cut would not stop destruction of the ozone layer, he said. "There is enough up there now to go on depleting the ozone."

Tolba's "everything" would include the fully halogenated chlorofluorocarbons CFC 11, 12, 113, 114, and possibly 115, as well as two bromine-containing halons, 1211 and 1301, but the halons are not likely to be included in a protocol at this time.

"Nobody can deal with the halons at this stage," Tolba said, because the governing council that established the list did so "with old scientific knowledge. So, we are only dealing here with halogenated CFCs. I have asked the governing council to expand the mandate" so that the halons can be dealt with later.

Under the auspices of the United Nations Environment Program, working groups have been considering the problem since the Vienna Convention for the Protection of the Ozone Layer was signed in 1985. Of the 28 nations that signed the convention then, only eight have ratified it. It is anticipated, however, that ratifications of the convention will go hand-in-hand with ratifications of the protocol that diplomats are expected to sign in Montreal in September. It is expected that the protocol will enter into force in 1988.

Tolba said the diplomatic conference for adoption and signing of the protocol is set for September 14-16. It will be preceded by a four-day working session for negotiators. Before that, "I, myself, will have a small consultation with a number of major producing countries June 29-30 in Brussels," he said. "In July, I will have a small group of lawyers here in Geneva to put the agreement into a legal format."

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FRANCHISES: NO CHANGES NEEDED IN FRANCHISE RULE, FTC SAYS

The Federal Trade Commission announced May 6 that no modifications to its franchise rule are necessary at this time. The commission made its determination after conducting a rule review under the Regulatory Flexibility Act.

The act requires the FTC to conduct a periodic review of its rules to determine whether they have a significant economic impact on small businesses. According to the FTC, the comments it received stated that there is a continued need for the rule; that it provides "substantial benefits" for both franchisors and prospective franchisees; and that any burdens imposed by the rule are outweighed by its benefits.

The commission's 1979 rule requires franchisors to furnish prospective franchisees with detailed information about the franchisor, the franchisor's business, the

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EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

May 14, 1987

MEMORANDUM FOR: NANCY RISQUE. CABINET SECRETARY

FROM: Robert K. Dawson, Associate Director
for Natural Resources, Energy and Science

SUBJECT: Report on Stratospheric Ozone Hearing

- This morning's hearing on stratospheric ozone before the Senate Subcommittee on Hazardous Wastes and Toxic Substances sent a clear message to Congress that this Administration has a well-coordinated interagency effort underway in response to ongoing international negotiations on a chloroflurocarbons (CFCs) protocol.

- The testimonies of Administrator Lee Thomas, Ambassador Richard Benedick (State), and Under Secretary Anthony Calio (NOAA) underscored in unison that the three fundamental elements of the U.S. position remain unchanged: a near-term freeze of CFC emissions; a longer-term step-by-step phasedown; and regular reviews of the science, economics, and technology.

- Chairman Baucus' comments and questions insinuated that the EPA had been bullied by OMB and other "gremlins" such as DOI, Commerce, and industry; and that EPA was backing away from last year's commitment of a 95 percent reduction. Thomas, who was appropriately backed up by Benedick and Calio, emphasized that the 95% reduction was only a potential goal if justified by the science, not a commitment.

- Senator Symms' introductory comments, which warned against circumscribing the U.S. position with too much disclosure at this point, came across well and were endorsed by Thomas.

- All in all, it was everything we could have hoped for.

N, This outcome would not have been attainable without your leadership.

THE WHITE HOUSE

WASHINGTON

May 12, 1987

MEMORANDUM FOR NANCY J. RISQUE

FROM: RALPH C. BLEDSOE

SUBJECT: Stratospheric Ozone Status

Attached is an Issue Summary on Stratospheric Ozone. It calls for DPC consideration of the issue on May 20, with a backup date of May 27. The President can be presented the issue sometime in mid-June if necessary. Final U.S. positions will be taken at the protocol negotiations in late June, and the protocols are scheduled to be signed in September.

For the forthcoming hearings by Sen. Baucus, agency testimony was due by COB yesterday. OMB has scheduled a meeting for 4:00 p.m. today to review proposed testimony. Agencies still hold somewhat differing positions on some aspects of the protocols, but all know the issue will be considered by the Domestic Policy Council.

THE WHITE HOUSE

WASHINGTON

May 12, 1987

MEMORANDUM FOR NANCY J. RISQUE

FROM: RALPH C. BLEDSOE

SUBJECT: Ozone Layer Protocol Negotiations

Issue - What should the U.S. position be on the protocol to protect the stratospheric ozone layer by controlling emissions of ozone-depleting substances.

Background - Because of the global nature of stratospheric ozone depletion, a delegation, led by the State Department, has been involved in international negotiations to reduce the use of chemicals that appear to damage the ozone layer. These chemicals are included in the following seven broad categories: solvents, refrigerants, foam blowing, fire extinguishing agents, sterilants, aerosol propellants, and miscellaneous uses.

There have been three negotiating sessions to date, the first in December 1986, the second in February 1987, and the third in April 1987. The general objectives for the U.S. Government are delineated in State Department Circular 175 of November 28, 1986. These objectives include:

(a) a near-term freeze on the combined emissions of the most ozone-depleting substances;

(b) long-term scheduled reduction of emissions of these chemicals down to the point of eliminating emissions from all but limited uses for which no substitutes are commercially available (could be as much as 95%), subject to c; and

(c) periodic review of the protocol provisions based upon regular assessment of the science, so as to reduce or add chemicals, or change the schedule or the emission reduction target.

Since the negotiations are now reaching a stage where final positions are to be taken, and due to the broad impacts of these positions, several Cabinet agencies have asked that the Domestic Policy Council should review the the U.S. position and give guidance to the U.S. negotiating team on the following Administration positions:

- o reduction of ozone-depleting chemicals;
- o the scope of chemicals covered;
- o the stringency and timing of any freeze;
- o sanctions for non-participating members;
- o provisions to protect countries who are party to the protocol from being put at a competitive disadvantage vis-a-vis non-parties;
- o exemption of less developed countries from the protocol;
- o a schedule for scientific, technical, and economic review;
- o the timing of the entry into force of any protocol;
- o and other miscellaneous issues.

Recommendations

That the Working Group on Energy, Natural Resources and the Environment, which has been meeting periodically to review the progress of the international negotiations, prepare an options paper for discussion by the Domestic Policy Council at a meeting scheduled for May 20, 1987.

Consistent with the above, OMB should coordinate the review of testimony to be presented before the Subcommittee on Environmental protection, the Subcommittee on Hazardous Waste and Toxic Substances, and the Senate Committee on the Environment and Public Works, May 13-15, 1987.

The final decisions on the U.S. positions can be reviewed and approved by the President and the Council in early June 1987.

May 12, 1987

MEMORANDUM FOR NANCY J. RISQUE

FROM: RALPH C. BLEDSOE

SUBJECT: Stratospheric Ozone Status

The explicit purpose of Congress to try to make the Administration appear to be in disarray over our policy on this issue was discussed at length.

While some progress has been made, there is still one more hurdle in preparing for the Baucus hearings - whether there will be a uniform response by those who testify.

All except EPA believe there should be a uniform response. The majority believe that other countries will not negotiate with us in the interim if they see a disparity in the U.S. position. State especially feels very strongly about this.

EPA wants there to be a uniform response - theirs. Other agencies cannot buy this. These agencies feel it would be preempt the President's options prior to hearing opinions from his Council members.

OMB will ask that principals meet one more time tomorrow morning to work this out. You will be expected to be the convenor.

On the response to Stafford's letter, after much discussion it was decided that OMB counsel and legislative affairs people will talk to Stafford's staff person who framed the letter. They will point out that Stafford has no legal right to make such a request, and they will point out the nature of the international negotiation and the President's domestic policy process as other reasons why no response will be made while the issue is "under review."

OZONE SQUABBLES

BY GUY DARST

WASHINGTON (AP) -- AN AMERICAN TRADE GROUP AND PART OF THE U.S. DELEGATION WORKED AGAINST THE COUNTRY'S DURING LAST WEEK'S OZONE NEGOTIATIONS IN GENEVA.

THE TALKS ENDED IN TENTATIVE ACCEPTANCE BY SOME INDUSTRIAL NATIONS OF A 20 PERCENT CUT IN TWO YEARS IN EMISSIONS OF CHEMICALS THAT DESTROY THE EARTH'S HIGH-ALTITUDE PROTECTIVE OZONE LAYER. ALSO ENVISIONED IS A FURTHER CUT TO 50 PERCENT TO BE REACHED BY A PATH STILL TO BE WORKED OUT.

THE U.S. POSITION GOING INTO THE TALKS HAD BEEN FOR A 95 PERCENT REDUCTION IN THE CHEMICALS, KNOWN AS CHLOROFLUOROCARBONS OR CFC COMPOUNDS.

ALTHOUGH THIS PROPOSAL HAD BEEN CLEARED BY THE STATE DEPARTMENT AND THE ENVIRONMENTAL PROTECTION AGENCY IN DECEMBER, INDUSTRY -- ESPECIALLY USER COMPANIES -- STARTED LOBBYING AGAINST IT IN MARCH AND APRIL, AND THAT OPPOSITION CONTINUED IN GENEVA.

THE CHAIRMAN OF THE PRINCIPAL TRADE GROUP, THE ALLIANCE FOR A RESPONSIBLE CFC POLICY, SAID TUESDAY THAT HIS GROUP'S OBSERVER AT THE GENEVA TALKS CIRCULATED A LETTER SUGGESTING THAT A FREEZE OF PRODUCTION WAS AN ADEQUATE SAFEGUARD FOR THE MOMENT. LACK OF MARKET GROWTH WOULD BE ''A POWERFUL INCENTIVE'' FOR THE INDUSTRY TO BRING SUBSTITUTE COMPOUNDS TO MARKET, HE SAID.

''WE GAVE A COPY OF OUR LETTER TO THE RUSSIANS AND THE JAPANESE,'' SAID THE ALLIANCE CHAIRMAN, RICHARD BARNETT OF YORK REFRIGERATION CO., A MAJOR USER OF CFCS.

THE U.S. DELEGATION TO THE GENEVA TALKS INCLUDED TWO MEMBERS WHO DID NOT SUPPORT A 95 PERCENT CUT: MARTIN SMITH, DIRECTOR OF THE OFFICE OF POLICY ANALYSIS IN THE INTERIOR DEPARTMENT, AND ROY SPRADLEY, DEPUTY GENERAL COUNSEL OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION.

SPRADLEY DECLINED TO BE INTERVIEWED. A SPOKESMAN, JACK LACOVEY, SAID SPRADLEY SUPPORTED THE U.S. POSITION IN THE TALKS, WHICH LACOVEY UNDERSTOOD TO INCLUDE A 95 PERCENT CUT EVENTUALLY.

SMITH WAS OUT OF TOWN, HIS OFFICE SAID.

THE HEAD OF THE DELEGATION, RICHARD BENEDICK, DEPUTY ASSISTANT SECRETARY OF STATE FOR OCEANS AND INTERNATIONAL ENVIRONMENTAL AND SCIENTIFIC AFFAIRS, DID NOT RETURN A TELEPHONE CALL.

AP-WX-05-06-87 1751EDT

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U.S. POSITION PAPER
UNEP OZONE LAYER PROTOCOL NEGOTIATIONS
THIRD SESSION: APRIL 27 - 30, 1987
GENEVA, SWITZERLAND

I. Background:

This is the third round of resumed negotiations under UNEP auspices on a protocol to control chemicals which deplete stratospheric ozone.

In the first session (December 1986) there was general agreement on the need for international measures to control emissions of ozone-depleting chemicals. However, differences remained over the scope, stringency, and timing of the controls, and other key issues (e.g., what to control, how to allocate national limits). The U.S. assumed a leadership role at this session, maintaining that the risk to the ozone layer warranted a scheduled phase-down of emissions of the major ozone-depleting chemicals. We also emphasized that the protocol should provide for periodic assessment and possible adjustment of the control measures, based on a periodic review of advances in scientific/technical knowledge.

In the second session (February 1987), and in discussions with the EC and other key participants since then, substantial progress has been made toward acceptance of the U.S. freeze-reduction approach. Other proposals which would seriously disadvantage the U.S. (e.g., proposals to allocate emissions limits on the basis of population and GNP) have been deflected. In addition, the EC, Japan, and possibly the USSR appear to be moving toward broadening coverage beyond CFCs 11 and 12, and have accepted the need for further reduction steps beyond the freeze. U.S. proposals for trade provisions and review mechanisms have also met with general agreement.

The third session is intended by the UNEP organizers and most other participants to resolve remaining issues, particularly the reduction process and schedule.

I. Overall Position:

The general objectives for the USG continue to be as delineated in the Circular 175 of November 28, 1986:

A. A near-term freeze on the combined emissions of the most ozone-depleting substances;

B. A long-term scheduled reduction of emissions of these chemicals down to the point of eliminating emissions from all but limited uses for which no substitutes are commercially available (such reduction could be as much as 95%), subject to C; and

C. Periodic review of the protocol provisions based upon regular assessment of the science. The review could remove or add chemicals, or change the schedule or the emission reduction target.

III. Objectives for this Session:

A. Keep the negotiations focused on elaborating a protocol based on the U.S. freeze-reduction approach (now included in the Chairman's text), and resist efforts to resurrect other options (e.g., Canadian, Soviet).

B. Continue to press for as broad a coverage as possible of potentially major ozone-depleters (CFC 11, 12, 113, 114, 115, Halons 1211 and 1301).

C. Focus attention on defining a meaningful initial reduction step beyond a freeze.

D. Try to narrow stringency and timing ranges in the Chair's control article text.

E. Maintain U.S. position on need for longer-term phasedown, consistent with overall negotiating goals (section II above).

F. Elaborate earlier U.S. positions on trade and scientific assessment, which have received strong support.

G. Strive for progress on the LDC issue, emphasizing an approach that will encourage LDCs to join but does not undercut our long-range environmental objectives.

H. Work toward a mix of protocol elements which encourages as many producer and user countries as possible to become Parties (including Eastern Bloc countries).

IV. Positions on Specific Topics:

A. Scope of Chemical Coverage: The delegation should strive to have all the major potential ozone depleters (i.e., CFC 11, 12, 113, 114, 115, halon 1211 and 1301) subject to the control article reduction schedule. However, after the freeze, the delegation may consider putting 114, 115, and/or the halons under a different control regime, as a means of encouraging broader country participation or achieving other key U.S. objectives.

B. Stringency and Timing:

1. Freeze: Virtually all delegations have accepted that the first step should be a freeze at 1986 levels, and the delegation should continue to support this. The delegation should also strongly support a timing of one year after entry into force for the freeze (the EC proposal calls for a timing of 2 years after entry into force). The delegation could also explore the possibility of having the freeze, and a ban on non-essential aerosols, take effect prior to entry into force of the protocol via, e.g., a voluntary commitment in a Diplomatic Conference resolution.

2. Reduction Schedule: The Chair's text calls for a 10-50% reduction (in brackets) for the second phase, in an unspecified period of time. The EC's opening position is for a 20% reduction within six years after entry into force, with an "automatic" trigger -- i.e., it would go into effect unless amended by a two-thirds vote of the Parties.

Within the context of the Circular 175 authority, the delegation should continue to explore various combinations of reduction schedules, ranging between the EC proposal and the U.S. proposed protocol text. The delegation should not at this meeting definitively agree to specific terms, but rather aim for a bracketed text, consistent with the Circular 175 authority, for further review in Washington.

C. Calculation of emissions: The delegation should continue to seek a formula to use as the basis for control which: does not undercut the control measures, encourages innovative practices and technologies in support of those measures, maximizes trade freedom among parties, does not put the U.S. at a competitive disadvantage vis a vis other parties, and encourages the broadest participation possible.

Thus, the delegation should continue to pursue for this session the "adjusted production" formula (P + I - E - D). However, if agreement on this is not possible, and there appears to be no movement (by the EC in particular) the delegation may explore other formulas, on an ad referendum basis, which meet the above criteria.

If there is significant opposition to including "-D" (amount destroyed) in the initial base year calculation, the delegation may discuss letting D = 0 for the first 1-3 years after entry into force of the protocol. The delegation should reserve its position on whether "permanently encapsulated" should be counted in this term.

D. Trade between Parties and Non-Parties: The delegation should actively support trade provisions which: (a) protect countries party to the protocol from being put at a competitive disadvantage vis a vis non-parties; (b) create an incentive for non-parties to join the protocol; and (c) discourage the movement of production to non-parties.

Therefore, the delegation should continue to support the trade article developed at the last session, and resist attempts to weaken it. The delegation should seek the drafting improvements recommended by the interagency trade issues group (see attached paper).

E. Developing Countries: The delegation should continue to be open to an "LDC" provision, in order to encourage broader membership in the protocol. However, the delegation should stress that any form of exemption must not significantly undermine the environmental goals of the protocol.

F. Scientific Assessment: The delegation should insist that scientific assessment be an integral part of the protocol. The delegation should support having a legal drafting group take the various texts for assessment mechanisms now on the table, and draft a composite text which provides for possible adjustment of the controls based on regular and emergency review of scientific, technical, and economic information. The report of the scientific sub-group from the last session, and the text of Article IV of the U.S. proposed text (tabled at first session, and largely accepted by the EC), should be used as a focus for this exercise.

Regarding timing of the reviews, the delegation should support having regular CCOL-level reviews at least every two years, a major review (like the NASA/NOAA/WMO/UNEP et al assessment) at least every four years, and emergency reviews when called for by the Parties.

G. Entry into Force provisions: The draft protocol text (Article XII) calls for entry into force thirty days after deposit of nine instruments of ratification (etc.). At the first session, the USSR opposed the 9/30 format in favor of an 11/90 requirement. If this continues to be a major obstacle to Soviet concurrence on this article, the delegation may accept a 10/60 or 11/90 format.

The delegation should also seek to amend this article so as to ensure that the protocol enters into force only when a sufficient number of the major producer/user countries have deposited instruments of ratification (etc.). Thus, the delegation should propose that this article specify that of the number of instruments required for entry into force:

(a) 50% of total world consumption or production is represented; or

(b) a substantial majority (e.g. 75%) be from countries with an adjusted production (or whatever formula is agreed to) greater than a certain level (the delegation would agree to propose a specific value for this at a subsequent session).

The delegation should also seek to amend this article so as to avoid creating an incentive for some countries to delay entry into the protocol, while reaping the global environmental benefits of reductions by countries which became Parties at the outset. To this end, the delegation should seek to add the following at the end of paragraph 3 of this article:

"Any such Party shall assume all applicable obligations then in effect for all other Parties."

H. Other Legal/Institutional issues: The delegation should seek drafting improvements consistent with the substantive elements of U.S. position.

V. Other Issues:

A. Future Session: In the event that it is not possible to complete work on the protocol at this session (which is likely) the delegation should support UNEP convening a fourth session in early July.

B. Tactics: No members of the delegation shall advocate or indicate support for substantial negotiating element not in this position paper. All members of the delegation are required to obtain approval from the head of delegation before discussing with any person outside the delegation any fall-back position in this position paper.

C. Press: All press inquiries shall be referred to the head or alternate head of delegation, or their designee.

D. Budgetary Commitments: The delegation should not commit the USG to any activity which cannot be funded out of current appropriations.

Drafted by:

Jim Losey - EPA/OIA (382-4894)
Suzanne Butcher - State/OES (647-9312)
4/22/87

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30 April 1987

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Ad Hoc Working Group of Legal and Technical
Experts for the Preparation of a
Protocol on Chlorofluorocarbons to
the Vienna Convention for the
Protection of the Ozone Layer (Vienna Group)

Third Session
Geneva, 27-30 April 1987

TEXT PREPARED BY ~~A SMALL SUB-WORKING GROUP OF HEAD OF DELEGATIONS~~ [THE EXECUTIVE DIRECTOR]

ARTICLE II: CONTROL MEASURES

1. Each party, under the jurisdiction of which CFC 11, CFC 12, CFC 113, (CFC 114, CFC 115) are produced shall ensure that within (2) years after the entry into force of this Protocol the (combined annual production and imports) (combined adjusted annual production) of these substances do not exceed their 1986 level.

2. Each party, under the jurisdiction of which substances referred to in paragraph 1 are not produced at the time of the entry into force of this Protocol, shall ensure that within (2) years from the entry into force of this Protocol (its combined annual production and imports) (its combined adjusted annual production) do not exceed the levels of imports in 1986.

3. Each party shall ensure, that within (4) years after the entry into force of this Protocol levels of substances referred to in paragraph 1 attained in accordance with paragraphs 1 and 2 will be reduced by 20 per cent.

4. Each party shall ensure that within (6) (a), (8) (b) years after the entry into force of this Protocol, the 1986 levels of substances referred to in paragraphs 1 and 2 will be further reduced (by 30 per cent), (a) (if the majority of the parties so decide, (b) (unless parties by a two-third majority otherwise decide), in the light of assessments referred to in Article III, such decision should be taken not later than (2) (4) years after entry into force.

5. Parties shall decide by (two-third majority) (a majority vote)

- whether substances should be added to or removed from the reduction schedule
- whether further reductions of 1986 levels should be undertaken (with the objective of eventual elimination of these substances).

These decisions shall be based on the assessments referred to in Article III.

Note: A second paragraph reading as follows has to be added to Article III. Beginning 1990, every four years thereafter the parties shall review the control measures provided for in Article II. At least one year before each of these reviews, the parties shall convene a panel of scientific experts, with composition and terms of reference determined by the parties, to review advances in scientific understanding of modification of the ozone layer, and the potential health, environmental and climatic effects of such modification.

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Date 5/11/87

MEMORANDUM FOR Nancy Risque

FROM: Lee Thomas

ACTION

_____ FYI

_____ For your signature

__X__ As we discussed

_____ Please see me/call me

COMMENTS

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
Office of the Administrator

MAY 6, 1987

Attached is a copy of Mr. Thomas' statement of April 22. Ozone nonattainment comments start on page 17.

Also attached is a background paper on stratospheric ozone and CFCs.

If you have any further questions, please feel free to call (382-4700).

Linda J. Fisher

STATEMENT OF
LEE M. THOMAS
ADMINISTRATOR
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION
OF THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

APRIL 22, 1987

Thank you for giving me this opportunity to talk about the Clean Air Act. I know some members of Congress are considering various ways of amending the Act, and I want to comment on those efforts.

In one sense, the Clean Air Act is the flagship among all the environmental laws that I administer at the Environmental Protection Agency (EPA). It was the first major piece of Federal pollution-control legislation enacted in this country. Congress passed it in 1970, the same year that EPA was founded. Both events reflected a national commitment to protect the environment and human health from the potentially adverse side effects of an industrialized, technologically-advanced society.

Since then, the Clean Air Act has served this country well. It has led to substantially reduced emissions of a number of air pollutants. It has led to the development and use of a variety of technologies to control mobile and stationary source air emissions. In general, air quality nationwide is demonstrably better now than in 1970, largely due to the Clean

Air Act. Because of our national success in protecting air quality, the Clean Air Act is the model that other industrialized nations study when they are faced with their own air quality problems.

This is not to say that the Clean Air Act is unflawed. Any law based on the scientific understanding of chemistry, human health, and environmental processes will tend to become dated as scientific understanding improves over time. Any law enacted to protect the environment from specific kinds of problems will tend to be less useful as the problems evolve over time in unforeseen ways, and as new problems develop.

Congress meant the Clean Air Act to be an evolving piece of legislation. It was amended substantially in 1977, at which time Congress also established a National Commission on Air Quality to study the law in depth and then to make recommendations on how it could be improved further in the future.

The Report of the National Commission on Air Quality was published in 1981, and several bills to amend the Clean Air Act have since been submitted in both the Senate and the House of Representatives. That report and those bills were intended to rectify perceived deficiencies in the effectiveness of the law. However, EPA is still implementing the law as it was amended a decade ago.

The current impetus to amend the Clean Air Act seems to be driven by two major concerns: acid rain and ozone nonattainment. These two air quality problems provide an enlightening context for a discussion of the merits of the Clean Air Act, because, from a legal and regulatory perspective, they provide a study in contrasts. First, acid rain is not mentioned in the Clean Air Act. In fact, it was barely recognized as an environmental problem when the Act was written. Ozone, on the other hand, was specifically mandated for control, and a specific date for compliance was included in the Act. Second, there is no clear understanding of the extent to which total loadings have to be controlled in order to protect the environment from acid rain. The target for control of ozone is explicit and well-documented by scientific data. Third, the costs of an acid rain control program generally would not be borne by the same people who enjoy the environmental benefits, whereas the costs and benefits of ozone control will generally be focussed in the same areas.

Despite these differences, acid rain and ozone seem to be providing the major impetus for discussions on amending the Clean Air Act. Because of these differences, which I am going to discuss today in greater detail, I believe Congress should treat them quite differently, especially in the context of any near-term amendments to the Act.

ACID RAIN

First of all, I would like to add to my past testimony on acid rain. Each time I or my predecessor has appeared before Congress over the past three years to testify on acid rain, we have stated unequivocally: "There is no doubt that there is an acid rain problem in this country." And we have pledged: "When the fundamental scientific uncertainties have been reduced, this Administration will craft and support an appropriate set of measures to solve the acid rain problem." We have maintained that a decision on additional controls without such knowledge would be inappropriate, not because controls are unnecessary or too expensive, but because it is premature and unwise to prescribe emissions controls based upon an inadequate scientific understanding of the problem.

To fulfill this pledge to address the acid rain problem, this Administration has made a major effort to obtain the scientific, analytical, and administrative answers needed to craft a solution. Three years ago, we initiated a three part acid rain program involving accelerated research, ongoing policy analysis, and Federal/State studies of implementation issues. Last year, consistent with the President's endorsement of the Special Envoys Report, the Administration added the commercial demonstration of emerging retrofit control technologies as a fourth element of the program. Further, EPA actively continues to implement the existing provisions of the Clean Air Act that control acid rain precursors. Each of these activities represents an important part of EPA's coherent and comprehensive acid rain program.

I believe that our policy and programs have been sound, even though they have not always been well-received by either the proponents or the opponents of a control program. Partisans on both sides of the issue seem uncomfortable with the prospect of an evolving science that may not fully sustain their current views. I believe that the progress we have made and the prospects to come are both relevant and timely to your discussion of possible legislation. Therefore, I would like to review each of these five areas, highlighting both our current results and the prospects for additional progress.

Research

The most visible single element of our acid rain program is the research. From a FY 1983 level of 22.7 million dollars, the budget of the National Acid Precipitation Program (NAPAP) has increased steadily to a level of 85 million dollars in FYs 1986 and 1987, and it is expected to remain at that level through FY 1989. The expanded funding has been consciously directed into those areas of greatest significance to policy resolution. Our intent is not simply to increase our scientific understanding of acid rain, but to gather the scientific information necessary to make a prudent decision on the need for additional controls. Early in the program we identified the principal scientific uncertainties hindering policy development. Revisiting and updating these needs has been achieved through ongoing policy analysis. Carrying out research targetted to reduce those uncertainties, has been our major goal over the past three years.

Just a few years ago, we had little information on the extent and magnitude of acid rain's effects on aquatic systems. We had little capability to predict the extent and rate of future damage, or to estimate the recovery rate of aquatic systems if deposition were reduced. Sufficient data on the extent, magnitude, and causes of damage in forests were not available.

We also recognized that qualitative answers alone would not be sufficient to base judgments on quantitative emissions reduction that could require the expenditure of tens of billions of dollars. I am pleased to report to this Committee that we are making substantial progress in determining what resources are at risk, and where, and over what time frame. I believe that we can have even more detailed answers to those questions within a reasonable period of time.

Let me be more specific. In the area of surface water acidification, we have initiated two major research efforts: the National Surface Water Survey to help determine the current extent and distribution of acidic surface waters; and the Direct/Delayed Response Project to help us to estimate the rate and magnitude of future acidification.

Phase I of the Eastern and Western Lake Surveys were published in August of last year and January of this year, respectively. Under current schedules, we anticipate that by mid 1988 we will see the results of Phase 2 of the Eastern Lake Survey, Phase 1 of the Eastern Stream Survey, and the

direct/delayed response estimates for the Northeast and Blue Ridge Province. Preliminary results from our analysis of episodic effects also should be available. These results will provide statistically defensible estimates of the current extent of surface water acidification and, in combination with projected emissions trends, expected rates of future acidification on a region-by-region basis for the Eastern United States.

In the area of forest research, we have established four major research cooperatives, each addressing a different major forest type, to test the major hypotheses of forest decline. The preliminary results of research on eastern spruce/fir and southern pine forests, which are expected to become available during the next two years, should provide us with strong qualitative indications of whether or not sulfur deposition is a significant factor in forest decline. A determination of the contribution of other air pollutants, such as NO_x, O_3, and heavy metals, to forest decline should be available soon thereafter. Currently, we have no scientifically defensible basis to judge that either sulfur or nitrogen deposition adversely affects forest productivity.

In the area of atmospheric sciences and source receptor modelling, we now have enough years of data on wet deposition across the United States to determine annual average deposition rates and short-term trends. We anticipate that we will have developed a state-of-the-art source-receptor model by late 1987 or early 1988. That model then will be field-tested thoroughly.

NAPAP has as one of its primary goals the production, by the end of its ten-year existence, of an integrated assessment of the acid rain problem in the United States. However, we have never intended to wait until the assessment is complete, if adequate answers can be found before then. Consequently, we have insisted that our research projects be designed to lead to near-term and mid-term incremental improvements in scientific understanding, not just long-term results.

As an example, last December I charged my research staff with the task of pulling together the most recent data and then taking those data as far as they could analytically to see if they could give us some of the answers we are seeking. I encouraged them to push themselves intellectually and to be willing to take some analytical and scientific risks. I made this request in the hope that we could find answers that would enable us to move forward on an acid rain decision in the near term.

A special workshop this last month brought together a panel of outside experts and scientists who generated the analyses. Since that workshop, I have met with many of the outside reviewers, who were very supportive of the effort. But they concluded that because of data limitations the attempt to predict future damage was premature. However, they did strongly support the approach, and they felt that the effort underway to acquire the needed data should be adequate. I am relating this to you because I think it is illustrative of our efforts to resolve these scientific uncertainties as soon as possible.

Policy Analysis

The second element of our acid rain program is ongoing policy analyses of both the implications of the research and the consequences of possible control programs.

As you are well aware, a number of different approaches to controlling precursor emissions have been proposed. In the past, Committee members and staff alike have relied heavily on EPA-sponsored analyses of major House and Senate acid rain bills.

We have conducted preliminary analyses of several bills currently being considered by this Committee. This includes quantitative "upper bound" estimates of the emissions and cost impacts of some provisions of S. 300 and S. 321. We have also conducted preliminary analyses of one interpretation of the utility control provisions of S. 316. We view all of these results as incomplete and subject to change pending more detailed examination. However, they do provide good first estimates of the effects of the different approaches to acid rain control which they embody.

S.316 achieves its reduction in two phases, requiring States to meet both a 1.2 lb SO_2/MMBTU average emissions rate and an emissions ceiling by 1998. States and sources then can choose a combination of controls that will meet those targets. They are allowed the option of interstate trading. EPA's estimates of the cost-effective response to

the SO_2 portion of this bill shows a 9-10 million ton reduction with cost ranging from $2.3 to $3.2 billion per year. If States default, costs could go as high as $5.3 billion per year.

S.321 requires both a 12 million ton reduction by January 1, 1996, and a State annual average emissions rate of 0.9 lb SO_2/MMBTU. After 1996, each plant, as it reaches 30 years of age, must meet 0.9 lb SO_2/MMBTU, or the State must meet a declining emissions cap. Our upper bound estimate of this more stringent legislative approach indicates about a 40 percent greater emissions reduction at a cost more than double that of S.316.

S.300 requires all utility boilers to meet a 0.9 lb SO_2/MMBTU monthly average emissions rate by 1991, with higher rates for some units with limited operation. At 30 years of age, boilers must meet NSPS. This approach achieves the highest reductions of the three bills we have reviewed, at over 14 million tons. However, our upper bound estimate shows costs more than three times greater than S.316.

Implementation Issues

The study of implementation issues is the third major element of our current acid rain program. Implementation issues are the procedural, technical, and administrative barriers that can hinder or prevent the successful implementation of any control program. In the past, implementation issues often have been the most critical link between

legislative intent and environmental results. Unfortunately, they also tend to receive the least forethought. In pursuing implementation issues, we are not presupposing the need for additional controls. But if they are needed, we want to be sure that everyone, including the States, is ready and able to make them work.

Therefore, we have been actively involving State governments in this effort with three million dollars from EPA's 1985 budget for grants to State air programs. Grants have gone to 36 States, and results from the studies are now coming in. We also have had two national workshops with the States to improve our understanding of the issues and to help shape possible solutions to potential implementation problems.

For example, we know in the States with complex regulatory and review procedures that a minimum of 30 months from enactment would be needed for a State to resolve conflicts between competing interests, prepare and adopt its plan, and submit it to EPA for review and approval. Also, the credibility of a bill's default provision would make a significant difference in the timeliness and adequacy of the State's proposed plan.

Furthermore, States and EPA agree that the economic and social consequences of a State's control plan would require the involvement of multiple interests and actors at the State level. Thus, preparation of an acid rain control plan,

if required, would not be a task simply for the State air pollution control agency. The interstate nature of utility operations, and the interstate ownership and operation of utilities, also must be considered in acid rain proposals and State plans, if they are to be implemented effectively.

As a result of the implementation issues program, many States are developing a much better understanding of the procedural data and analytic methods they would use, if necessary, to design and implement an acid rain control program. In addition, many States have developed vastly improved data about the sources of emissions and costs of control measures within their States. These preparations, when completed, will improve the likelihood of successful and rapid implementation in the event the Administration determines that acid rain control action is needed.

We expect to synthesize the results of the EPA/State studies by the end of this year. We will then integrate the knowledge gained from this effort into program options during FY 1988, as appropriate.

Retrofit Technology Demonstration

Prior to 1980, the Agency's work in the area of SO_2 and NO_x control technology has been used to support the development of New Source Performance Standards (NSPS). This work has helped to facilitate both development and demonstration of:

1. Several flue gas desulfurization (FGD) or scrubber systems for high efficiency control of SO_2 from coal-fired utility boilers;
2. The addition of specific organic acids to FGD systems to improve the operability and SO_2 control efficiency of the systems at reduced cost; and
3. Low-NO_x firing systems that offer an effective low-cost approach to reducing nitrogen oxides emissions.

These systems are the current state-of-the-art emissions control technologies for new utility boilers, but many can also can be retrofitted on existing boilers. In EPA's view, the most important focus of clean coal technology development efforts would be coal-fired retrofits. More than 65 percent of U.S. SO_2 emissions currently come from coal-fired plants. This figure gains additional significance because of recent practice of rehabilitating and repowering those plants, thus increasing their useful lives. Life extension of those plants by two or more decades beyond what was previously anticipated may alter one of the Clean Air Act's fundamental assumptions concerning control strategies. While it is still true that new sources subject to more stringent standards will gradually replace existing sources, this will occur at a much slower pace than was expected when the Act was last revised. Furthermore, because such a high percentage of SO_2 and NO_x are emitted from existing coal-fired boilers, we believe it is appropriate to focus Federal resources on technologies that could affect these

emissions. Therefore, since the early 1980s, EPA has been working more recently on technologies with the potential for low-cost, moderate-to-high SO_2 control for existing boilers. For example:

1. EPA has developed the LIMB (Limestone Injection Multistage Burners) process that uses low-NO_x burners for NO_x control and furnace sorbent injection for SO_2 control. LIMB, which is particularly attractive as a retrofit technology because of its low capital costs, could remove up to 50-60 percent of SO_2 and NO_x at a lower capital cost than FGD, and it requires little room for retrofit.
   - o The wall-fired boiler demonstration is scheduled to begin operation in mid-1987 at the Edgewater plant of Ohio Edison.
   - o A tangentially-fired boiler demonstration procurement has been initiated; however, final contract negotiations have not been concluded.
2. EPA has developed several other technologies for lower-cost SO_2 control, including the E-SO_x process (a low-cost, SO_2 removal technology that can be retrofitted into boilers that presently use electrostatic precipitators). The E-SO_x process uses advanced Electrostatic Precipitator (ESP) technology to free duct space needed for sorbent injection. Small pilot-scale testing shows the potential for 50-70 percent SO_2 capture in selected existing ESPs with capital costs

significantly less than conventional FGD. A large pilot-scale demonstration has been selected for negotiation under the State of Ohio coal technology program with Babcock and Wilcox and EPA as co-sponsors.

3. EPA has performed basic bench- and pilot-scale development on reburning technology for NO_x control. This technology involves the addition of secondary fuel and air above the primary combustion zone. It can reduce NO_x emissions by 50 percent or more. EPA is in final negotiations for a project to demonstrate reburning technology for NO_x control on a cyclone-fired boiler. The goal is to achieve 50-70 percent NO_x control on a class of boilers that are not readily adaptable to low-NO_x burner technologies.

The Joint Envoys' report included a recommendation stating that "more consideration should be given to projects that demonstrate retrofit technologies applicable to the largest number of existing sources..., [and] special consideration should be given to technologies that can be applied to facilities currently dependent on the use of high-sulfur coal." This is entirely consistent with the EPA efforts currently underway.

The Department of Energy is also conducting research in Clean Coal Technology (CCT). On March 18, 1987, the President announced that he would seek the full amount of the government's share of funding recommended by the Joint Envoys, $2.5 billion, for

demonstration of innovative control technologies over a five year period. Consistent with this announcement, the Administration has amended the FY 1988 budget request and supporting outyear estimates for the CCT-innovative control technology program.

Implementation of the Current Clean Air Act

Regarding the last element of EPA's acid rain program -- active implementation of the existing Clean Air Act -- let me make two points. First, despite the fact that the ambient program is not directed at reducing total loadings, over the past 10 years (1976-1985) the effect of that program, plus the stringent control of new sources, has resulted in a 21 percent reduction in total annual SO_2 emissions. It also has caused the rapid growth in NO_x emissions to level off.

The second point regards the future trends of those pollutants. Without any major new regulatory programs, and assuming moderate economic growth, we expect SO_2 emissions during this century to vary between current levels and a 10 percent increase. We expect NO_x emissions to rise no more than 15 percent over the same time period.

To conclude my remarks about acid rain, I will simply restate one of the main points of my past testimony on the subject. I see no compelling need for any near-term amendments to the Clean Air Act to require acid rain controls, given our current lack of understanding of either the

quantitative nature of the problem or the quantitative benefits of any particular acid rain proposal, and given the research results we expect to see in the next one or two years.

OZONE NONATTAINMENT

Ozone nonattainment, on the other hand, presents us with a different kind of problem. Ambient ozone concentrations in excess of the national ambient standard undoubtedly pose a threat to human health and the environment. In spite of the fact that we have made substantial progress reducing emissions of volatile organic compounds (VOCs) and, consequently, ozone concentrations nationwide, approximately 70 different metropolitan areas across the country are not meeting the ozone standard. Many of those will not attain the standard by the December 31, 1987 target date. This situation can be attributed to a number of different factors, some of which I will describe in more detail later in this testimony. But the fact remains: many areas are not going to meet the ozone attainment deadline by the end of this year, and the Clean Air Act gives us little guidance on what actions we should take under such circumstances.

There can be little doubt that ozone nonattainment is an environmental and human health problem of legitimate national concern. Studies indicate that elevated ozone concentrations occurring on some days during the hot summers in many of our urban areas may reduce lung function, not only for people with preexisting respiratory problems, but even for people in good health. This reduction in lung function may be accompanied

by symptomatic effects such as chest pain and shortness of breath. Observed effects from exposure of 1 to 2 hours with heavy exercise include measurable reductions in normal lung function in a portion (15-30 percent) of the healthy population that is particularly sensitive to ozone. While many of the measured effects observed in humans appear to be transitory and reversible, there is concern that repeated exposures may cause long-term damage to the lungs. However, at present our ability to determine the consequences of chronic long-term human exposures is limited.

Even more worrisome is the possibility that recurrent ozone exposures over a period of years may result in permanent damage to the lungs. Such damage has been observed in animals exposed continuously for several months to ozone concentrations comparable to the peak short-term concentrations found in some urban areas. Data from animal toxicology studies, clinical studies of humans, and real-world epidemiological studies all suggest that ozone concentrations currently being encountered in many urban areas may be harmful to human health.

Another consequence of the ozone nonattainment problem is its effect on welfare. Studies have shown that elevated levels of ozone can decrease the yield of several important agricultural crops, may have caused severe damage to trees in California, and may be contributing to forest decline in the eastern United States. Because most controls are

implemented to meet the national health standard, the currently estimated welfare effects associated with ozone are relatively small compared to the likely cost of control. However, it is clear that ozone nonattainment is an environmental problem of legitimate national concern.

The Clean Air Act calls on States to develop State Implementation Plans (SIPs) that demonstrate how they will attain and maintain the national ambient standard for ozone (i.e., 0.12 parts per million). The SIPs describe the specific control measures needed to achieve attainment in each State. In order for a SIP to be approved by EPA, it must include enforceable regulations that provide for attainment of the standard. The States are then responsible for implementing and enforcing the SIPs.

In theory, if a State implements every control measure in an approved SIP, it should attain the standard by the target date. However, in many areas this has not happened, and there are several reasons why.

First, the formation of ozone is dependent on complex meteorological events and the interaction of volatile organic compounds (VOCs) and nitrogen oxides (NO_x) in sunlight. Because our scientific knowledge of atmospheric chemical processes and weather patterns is inexact, the ozone reductions expected to be achieved by the specific control measures identified in the SIPs sometimes were overestimated by States and EPA.

Second, the economy has grown more, and in different ways, than was estimated in some of the SIPs. For example, vehicle miles travelled (VMT) have grown far more quickly than expected when most SIPs were developed. In the Los Angeles area, VMTs have increased by about 55 percent over the past 16 years, while the population has grown by only 25 percent over the same period. Thus our success in attaining the standard has been undercut in many areas by unforeseen economic growth.

Third, when most SIPs were approved, our understanding of the kinds and numbers of emissions sources that contributed to ozone was less than perfect. For example, only recently have we begun to recognize that publicly-owned water treatment works and hazardous waste treatment, storage, and disposal facilities are significant sources of ozone-causing VOCs. In other cases, the information available when the SIPs were developed led to an underestimation of the VOC reductions needed to reach attainment in many cities. The contribution of mobile sources to the ozone problem was also underestimated in many areas.

Fourth, some areas failed to reach attainment simply because they did not implement all of the elements of their SIPs, or else failed to implement them effectively. Thus they did not achieve the level of emissions reductions called for in their SIPs.

The question we all face today is simple: given the serious nature of the ozone problem, and given the fact that ozone nonattainment will be widespread at the end of the year, what steps should we take within what timeframe to ensure nationwide attainment of the ozone standard?

The answer to that question, on the other hand, is anything but simple, and much of the complexity is related to the question of timing. On the one hand, we want to reduce the health risk from ozone as quickly as possible. On the other hand, the social disruption involved in attaining the standard will be inversely proportional to the amount of time allowed. That is, the less time allowed to reach attainment, the more disruption. Many of the worst nonattainment areas in this country simply cannot reach attainment within the short term--that is, within a few years--unless they implement some extremely harsh--some might say heroic--and costly lifestyle-changing measures. Other areas could meet attainment with relatively less difficult actions taken over a relatively short time. The different circumstances of the different nonattainment areas is one of the factors that most complicates the life of air program managers at EPA and in State and local control agencies.

There are a number of actions that EPA can take under the current Clean Air Act to keep the country moving toward ozone attainment. We've begun taking them. For example, we will continue to implement the Federal Motor Vehicle Control Program (FMVCP) with its associated automobile

inspection and maintenance (I&M) program. Despite expected growth in VMT, that program alone should result in about a 20 percent decline in national VOC emissions by 1995, which could bring about 30 areas into attainment.

In order to achieve the potential reductions from motor vehicle controls, EPA is working to ensure that State I&M programs are operating responsibly and effectively. When EPA identifies problems in a State I&M program, we encourage the States to correct them. About six weeks ago I sent letters to the governors of four States with insufficient I&M programs calling on them to submit corrective I&M plans and then implement and enforce them. I&M programs undoubtedly help reduce mobile source VOC emissions, and we at EPA are working to ensure that such programs are implemented effectively wherever they have been established.

In order to reduce ozone concentrations nationwide, EPA is considering some new VOC controls that would be applicable everywhere in the country. For example, a regulatory program to reduce gasoline volatility could reduce nationwide VOC emissions by as much as 8 percent by 1995, while controls on refueling emissions would result in perhaps as much as another 2 percent reduction by the year 2000.

The full implementation of existing SIP requirements also would help reduce VOC emissions nationwide. In order to ensure that existing SIPs are achieving their intended